	Application No.	Applicant(s)
Notice of Allowability	09/431,699	DEMARCKEN, CARL G.
	Examiner	**Art Unit**
	Robert D. Rines	3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Appeal Brief filed 22 November 2004 and Examiner Initiated Interview 9/17/07*.

2. ☒ The allowed claim(s) is/are *69-113*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
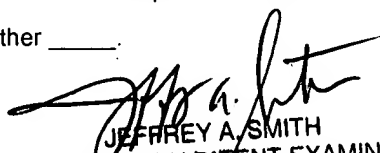
    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
      Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date *9/17/07* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

JEFFREY A. SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

2.   Authorization for this examiner's amendment was given in a telephone interview with

Denis Maloney (Reg. # 29670) on 17 September 2007.

3.   The application has been amended as follows:

The listing of claims below replaces all prior versions and listing of claims in the application.

Claims 1-68 have been cancelled.

Claims 69-113 have been added.

4.   The full text of allowable claims 69-113 appears below:

Listing of Claims

69. A method for providing a set of diverse travel options, the method comprising:

reducing a larger set of travel options to a smaller set of diverse travel options in accordance with diverse travel requirements that represent conditions for a travel option to be considered for inclusion in the set of diverse travel options that includes at least first and second travel options that satisfy first and second travel requirements, with the first and second travel requirements representing different values in a category of travel requirements, and the travel options including a flight and fare combination; and

wherein reducing a larger set of travel options to a smaller set of diverse travel options further comprises:

evaluating for the travel requirements a set of travel preference functions used to order the larger set of travel options.

70. The method of claim 69 wherein reducing a larger set of travel options to a smaller set of diverse travel options comprises:

generating one or more travel options consistent for each of the diversity of travel requirements.

71. The method of claim 69 wherein reducing a larger set of travel options to a smaller set of diverse travel options comprises:

generating one or more desired travel options consistent with diversity of travel requirements.

72. The method of claim 69 wherein reducing a larger set of travel options to a smaller set of diverse travel options further comprises:

generating one or more of the best travel options consistent with a diversity of travel requirements where the travel requirements are dependent on the original set of travel options.

73. The method of claim 69 wherein the set of travel requirements includes requirements for different airlines.

74. The method of claim 69 wherein the set of travel requirements includes requirements for travel times of day, travel dates, numbers of stops, arrival pr departure airports, and cabin class.

75. The method of claim 69 wherein the set of travel requirements includes requirements that are combinations of other requirements.

76. The method of claim 75 wherein the set of travel requirement combinations include outbound and return travel dates or times of day.

77. The method of claim 75 wherein the set of travel requirements combinations include airlines and number of stops, arrival and departure airports.

78. The method of claim 75 wherein the set of travel requirements combinations include airlines and number of stops, arrival and departure airports.

79. The method of claim 69 wherein the method reduces a larger set of travel options to a smaller set of diverse travel options in accordance with travel requirements in the ordered list of travel requirements.

80. The method of claim 69 wherein the travel requirements represent conditions for a travel option to be considered for inclusion in the diverse list of travel options Rts.

81. The method of claim 69 wherein the set of travel requirements includes requirements for different airlines.

82. The method of claim 69 wherein the set of travel requirements includes requirements for travel times of day, travel dates, numbers of stops, arrival pr departure airports, and cabin class.

83. The method of claim 69 wherein the set of travel requirements includes requirements that are combinations of other requirements.

84. The method of claim 83 wherein the set of travel requirement combinations include outbound and return travel dates or times of day.

85. A computer implemented method for generating a diverse list of [N] travel options Rts from a larger list of travel options Ts, the method comprises:

generating a prioritized ordered list of requirements Rs;

sorting the list of travel options Ts by an ordering function F to produce a best-first ordered list Ts2;

selecting a travel requirement R1 from the list of requirements Rs;

identifying a travel option T1 in the ordered list Ts2 that satisfies the travel requirement R1 that represents a value in a category of travel requirements;

adding the travel option T1 to the diverse list of travel options Rts;

selecting a second travel requirement R2 from the list of requirements Rs;

identifying a travel option T2 in the ordered list Ts2 that satisfies travel requirement R2 that

represents a different value in the category of the first travel requirement R1; and

adding the travel option T2 to the diverse list of travel options Rts.

86. The method of claim 85 further comprising:

initializing the list of result travel options Rts to be empty; and if the remaining list of

requirements Rs is empty, returning an ordered list of diverse travel options Rts.

87. The method of claim 86 further comprising:

initializing the list of result travel options Rts to be empty; and if the remaining list of

requirements Rs is not empty,
selecting a first travel requirement R from the ordered list of requirements (Rs); and

removing a requirement R from the requirement list (Rs).

88. The method of claim 87 further comprising:

determining for each travel requirement R2 and Rs, whether the requirement R2 includes a

requirement R, and T satisfies R2, and if T satisfies R2;

removing R2 from Rs.

89. The method of claim 87 further comprising:

finding a first option T in a best-first ordered list (Ts2) that satisfies travel requirements R.

90. The method of claim 89 further comprising:

determining whether any option in the Ts2 satisfies the travel requirement.

91. The method of claim 90 wherein if no option in Ts2 satisfies R, the method further comprises:

checking if the remaining list of requirements Rs is empty.

92. The method of claim 91 wherein if the diversity process determines if a travel option T is not already in the result list Rts,

adding the travel option T to end of the result travel option list Rts; and

determining if the size of the travel option list Rts is equal to or greater than N the process in order to return the ordered list of diverse travel options.

93. A travel planning system comprising:
a computer system; including:

a computer readable medium storing a computer program product comprising instructions to cause the computer system to:

output a set of travel options, smaller than a complete set of travel options that the computer has computed, by instructions to:

prune the complete set of travel options to a smaller set with a diversity-based pruning process, the diversity-based pruning process produces at least one travel option in the smaller set that satisfies a first travel requirement and at least one other travel option in the smaller set that satisfies a second travel requirement, with the first and second travel requirements representing

different values in a category of travel requirements with the values for the travel requirement based on the set of travel options.

94. The travel planning system of claim 93 wherein the diversity-based pruning process comprises instructions to cause the system to: .

generate a diverse list of N travel options Rts from a larger list of travel options Ts,

generate a prioritized ordered list of requirements Rs; and

sort the list of travel options Ts by an ordering function F to produce a best-first ordered list Ts2 with the list of options being optimized travel options for a set of travel requirements R in accordance with the ordering function F.

95. The travel planning system of claim 94 further comprising instructions to cause the system to:

initialize the list of result travel options Rts to be empty; and if the remaining list of requirements Rs is empty,

return an ordered list of diverse travel options Rts.

96. The travel planning system of claim 95 further comprising instructions to cause the system to:

initialize the list of result travel options Rts to be empty; and if the remaining list of requirements Rs is not empty, select a first travel requirement R from the ordered list of requirements (Rs); and remove a requirement R from the requirement list (Rs).

97. A computer program product residing on a computer readable medium for generating a diverse list of [N] travel options Rts from a larger list of travel options Ts, the computer program product comprises instructions for causing a computer to:

generate a prioritized ordered list of requirements Rs;

sort the list of travel options Ts by an ordering function F to produce a best-first ordered list Ts2;

select a travel requirement R1 from the list of requirements Rs;

identify a travel option T1 in the ordered list Ts2 that satisfies the travel requirement R1 that represents a value in a category of travel requirements;

add the travel option T1 to the diverse list of travel options Rts;

select a second travel requirement R2 from the list of requirements Rs;
identify a travel option T2 in the ordered list Ts2 that satisfies travel requirement R2 that represents a different value in the category of the first travel requirement R1; and

add the travel option T2 to the diverse list of travel options Rts.

98. The computer program product of claim 97 further comprising instructions to:
initialize the list of result travel options Rts to be empty; and if the remaining list of requirements Rs is empty, returning an ordered list of diverse travel options Rts.

99. The computer program product of claim 97 further comprising instructions to:
initialize the list of result travel options Rts to be empty; and if the remaining list of requirements Rs is not empty, select a first travel requirement R from the ordered list of requirements (Rs); and removing a requirement R from the requirement list (Rs).

100. The computer program product of claim 99 further comprising instructions to:
find a first option T in a best-first ordered list (Ts2) that satisfies travel requirements R.

101. The computer program product of claim 99 further comprising instructions to:
determine whether any option in the Ts2 list satisfies the travel requirement.

102. The computer program product of claim 101 wherein if no option in Ts2 satisfies R, the instructions further comprise instructions to: check if the remaining list of requirements Rs is empty.

103. The computer program product of claim 101 wherein if the instructions determine that a travel option T is not already in the result list Rts, add the travel option T to end of the result travel option list Rts; and determine if the size of the travel option list Rts is equal to or greater than N the process in order to return the ordered list of diverse travel options.

104. The computer program product of claim 101 further comprising instructions to:
determine for each travel requirement R2 and Rs, whether the requirement R2 includes a requirement R, and T satisfies R2, and if T satisfies R2;
remove R2 from Rs.

105. An article of manufacture having computer-readable program portions embodied therein for generating a diverse set of travel options, the article comprising instructions for causing a processor to:

generate a first ordered set of travel options using a first preference function;
select travel options from the first set, the selected travel options corresponding to a plurality of diverse travel requirements;
generate a second ordered set of travel options using a second preference function, the second preference function being different from the first preference function;
select travel options from the second set, the selected travel options corresponding to a plurality of diverse travel requirements; and
combine the selected travel options to generate the diverse set of travel options.

106. The article of claim 105 further comprising instructions for causing a processor to generate a plurality of travel requirements,

wherein the computer-readable program portion for selecting a predefined number of best travel options from the first set further comprises for each travel requirement, selecting one or more travel options from the first set that satisfy that travel requirement, and

wherein the computer-readable program portion for selecting a predefined number of best travel options from the second set further comprises for each travel requirement, selecting one or more travel options from the second set that satisfy that travel requirement.

107. The article of claim 105 wherein values for a particular travel requirement are based on the candidate set of travel options.

108. The article of claim 105 wherein the plurality of travel requirement include particular carriers, number of stops, outbound travel departing in a predefined time period, return travel departing in a predefined time period, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date.

109. The article of claim 105 wherein values for the travel requirement of particular carriers with corresponding travel requirements include a first particular airline and a second, different particular airline.

110. An article of manufacture having computer-readable program portions embodied therein for generating a diverse set of travel options, the article comprising instructions for causing a processor to:

determine a candidate set of travel options, the candidate set of travel options being based on user input;

define a set of diversity requirements with instructions to define comprising instructions to:

establish a plurality of travel requirement templates, for each travel requirement template, define a plurality of travel requirements, each of the travel requirements corresponding to a different value of the respective travel requirement template to produce the set of diversity requirements, and for each travel requirement in the set of diversity requirements,

select from the candidate set of travel options a travel option that satisfies that travel requirement with values for a particular travel requirement template based on the candidate set of travel options;

combine the selected travel options for the travel requirements to generate the diverse set of travel options; and display the diverse set of travel options to a user.

111. The article of claim 110 wherein values for a particular travel requirement template are based on the candidate set of travel options.

112. The article of claim 110 wherein the plurality of travel requirement templates include particular carriers, number of stops, outbound travel departing in a predefined time period, return travel departing in a predefined time period, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date.

113. The article of claim 112 wherein values for the travel requirement template of particular carriers with corresponding travel requirements include a first particular airline and a second, different particular airline.

REASONS FOR ALLOWANCE

5.   The following is an examiner's statement of reasons for allowance:

Appellant's remarks filed in the Appeal Brief filed 22 November 2004 are both persuasive and

commensurate with both the original disclosure and the claims as presented above by Examiner's

Amendment.

It is further noted the allowable subject matter of the instant invention is similar to that of related

U.S. Patent Application 09/431,365.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Stoltz, Craig, *TRAVEL INSIDER; New Web site Beats Rivals at Finding Low Air Fares; Internet*
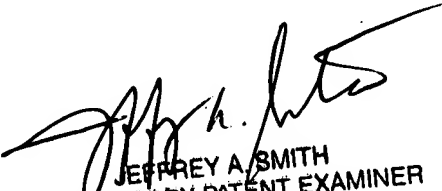
* A recently debuted search tool is a winner at locating good prices, wide choice in domestic

flights.; Los Angeles Times. Los Angeles, Calif.: Dec. 26, 1999. pg 2.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert D. Rines whose telephone number is 571-272-5585. The examiner can normally be reached on 8:30am - 5:00pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDR

JEFFREY A SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600